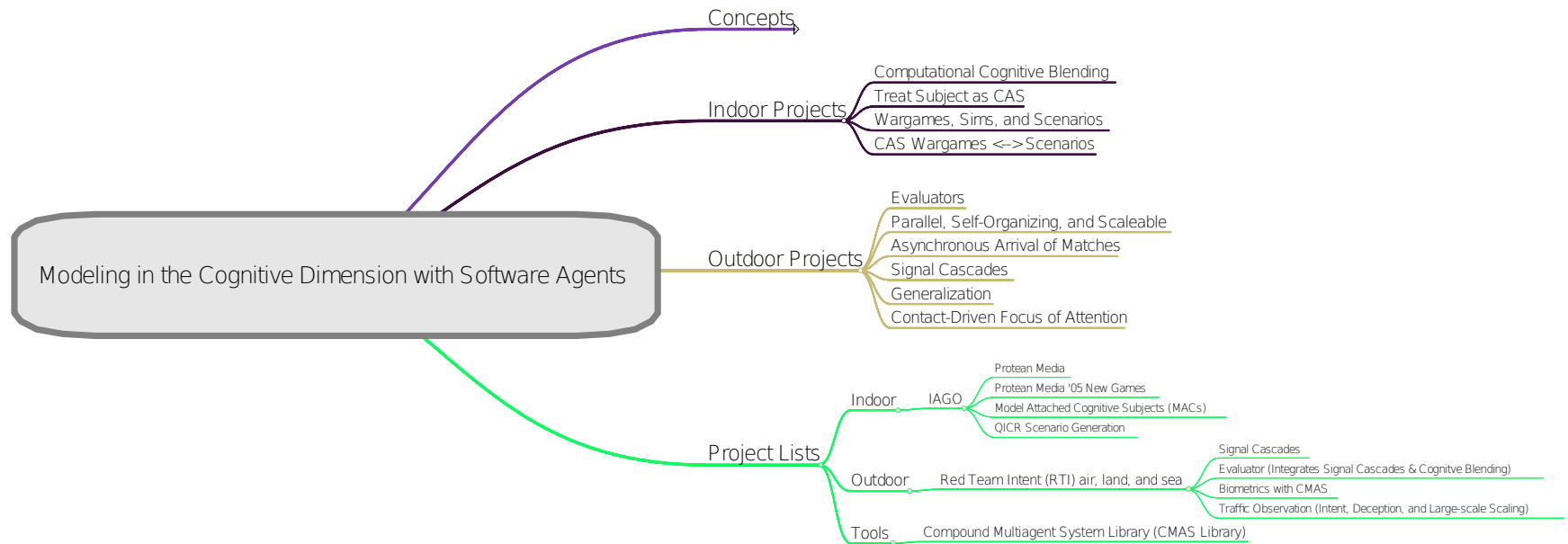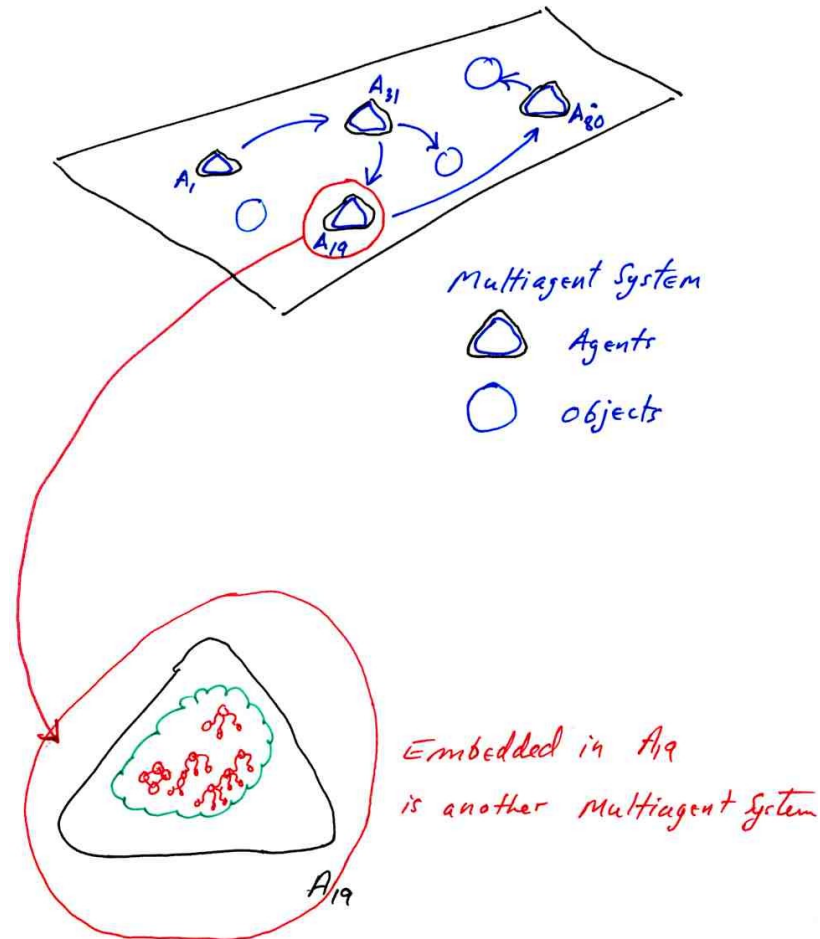# Computer-Generated Autonomy

Compound Multiagent Systems in
MOVES Research
John Hiles

Overview of Work with Compound Agents

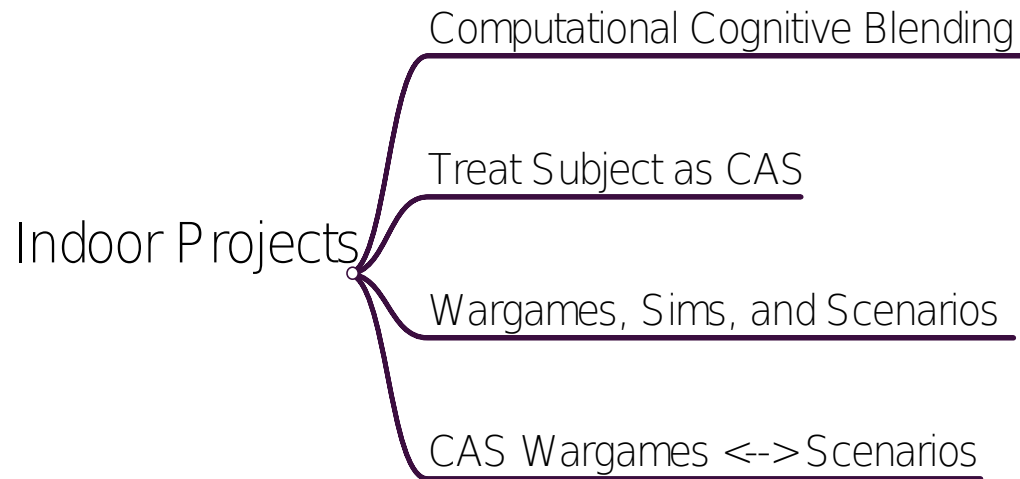**Modeling in the Cognitive Dimension with Software Agents**
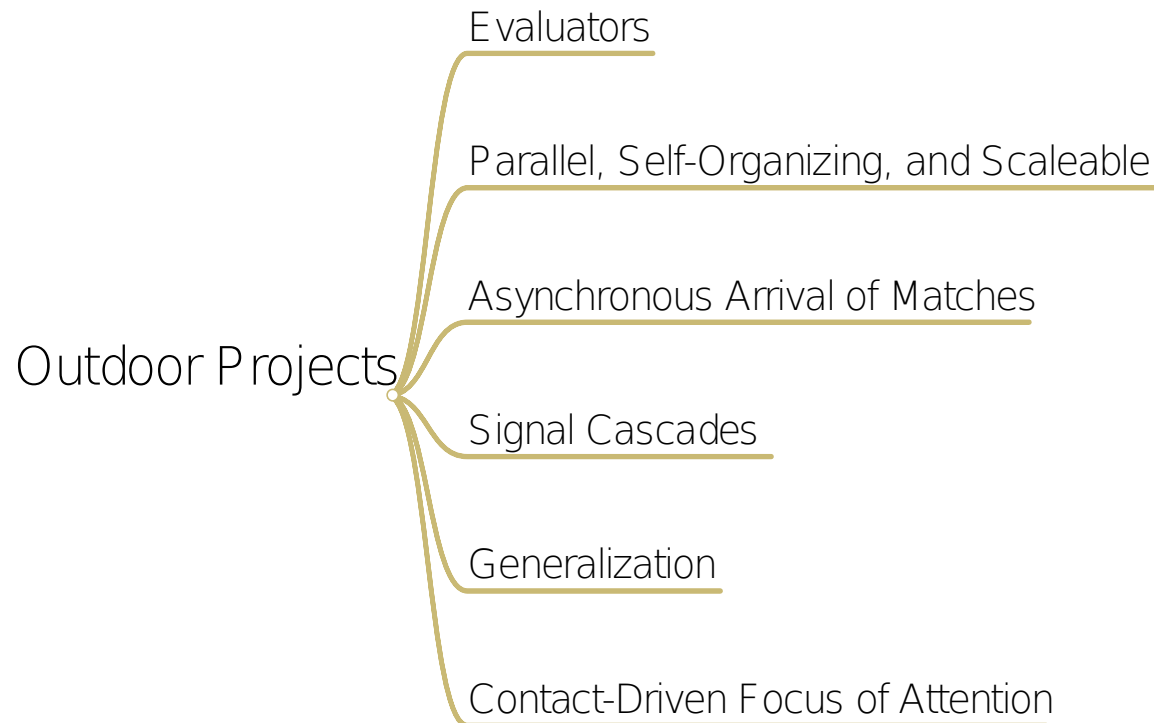
- **Concepts**

- **Indoor Projects**
  - Computational Cognitive Blending
  - Treat Subject as CAS
  - Wargames, Sims, and Scenarios
  - CAS Wargames <-> Scenarios

- **Outdoor Projects**
  - Evaluators
  - Parallel, Self-Organizing, and Scaleable
  - Asynchronous Arrival of Matches
  - Signal Cascades
  - Generalization
  - Contact-Driven Focus of Attention

- **Project Lists**
  - **Indoor**
    - **IAGO**
      - Protean Media
      - Protean Media '05 New Games
      - Model Attached Cognitive Subjects (MACs)
      - QICR Scenario Generation
  - **Outdoor**
    - **Red Team Intent (RTI) air, land, and sea**
      - Signal Cascades
      - Evaluator (Integrates Signal Cascades & Cognitve Blending)
      - Biometrics with CMAS
      - Traffic Observation (Intent, Deception, and Large-scale Scaling)
  - **Tools**
    - Compound Multiagent System Library (CMAS Library)

CMAS – Compound Multiagent Systems

Multiagent System

Agents

objects

Embedded in A_{19} is another Multiagent System

A_{19}

COMPOUND MULTIAGENT Systems

Applications in Traditional S&M

Computational Cognitive Blending

Treat Subject as CAS

Indoor Projects

Wargames, Sims, and Scenarios

CAS Wargames <-> Scenarios

Operational Application of S&M

Outdoor Projects
- Evaluators
- Parallel, Self-Organizing, and Scaleable
- Asynchronous Arrival of Matches
- Signal Cascades
- Generalization
- Contact-Driven Focus of Attention

Overview of Protean Media

Protean Media

- Data Collection
- Data Analysis
- Documentation
- Environment
  - Web-like presence
  - Browser-like access to UI
  - MAS Game Engine
  - Local Wireless Connections for <12 Machines
- Objects
- Agents
- Relationships
- Operations
- Laws
- User Interface
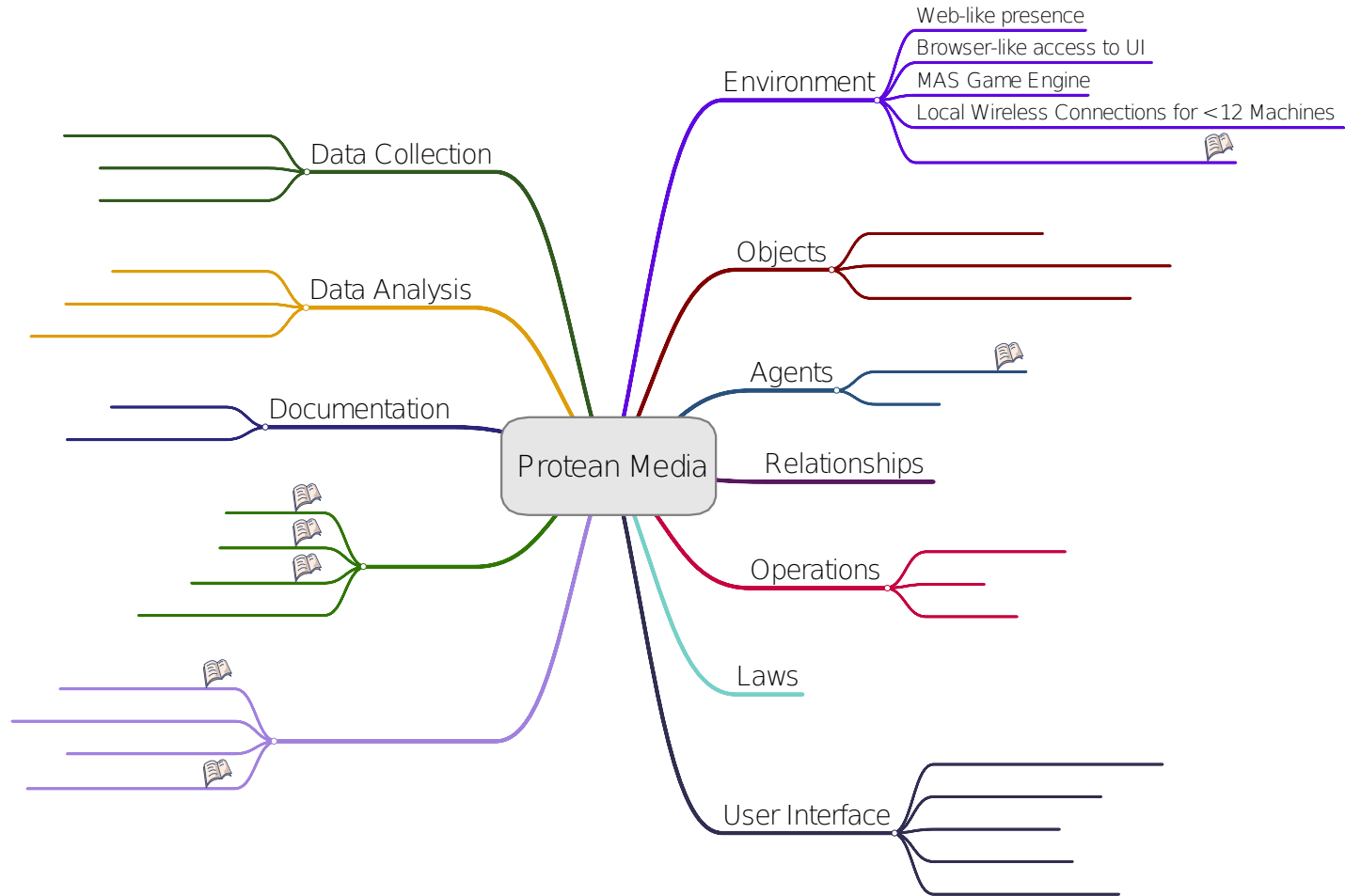
Protean Media Players Assemble Operations that Combine Hard and Soft, Persuasive and Coercive Forces

QICR Scenario Generation

- QICR Scenario Process
  - Goals
  - Approach
    - Process and Software Design
    - Definition-stage Workshop
    - Candidate Scenario Generation
    - Refinement-stage Workshop
    - Product Report
  - Budget Estimate
  - Definitions